appears near the root of the male organ (*f*), where it is coiled up, and before terminating in the penis presents a small dilatation.

"The female organs are an ovary (*g*) which lies across the middle of the body; and an oviduct (*h*) which is dilated and sacculated transversely along its middle third. The vesicle (*i*) found in this situation in the gasteropod mollusks opens by a short neck at the termination of the oviduct.

"JOHN GOODSIR."

VI.—*On certain Characters in the Crania and Dentition of Carnivora which may serve to distinguish the subdivisions of that Order.* By G. R. WATERHOUSE, Esq.*

JUDGING from the form of the skull and lower jaw, and from the structure of the teeth, the order *Carnivora* appears to consist of six families, of which the Dog, Viverra, Cat, Weasel, Bear, and Seal afford familiar examples; of these the Cats and Weasels appear to be the most truly carnivorous, and the Bears the least so.

To these six families Mr. Waterhouse applies the names *Canidæ*, *Viverridæ*, *Felidæ*, *Mustelidæ*, *Ursidæ*, and *Phocidæ*.

In the first of these families (the *Canidæ*) the muzzle is elongated; the bony palate terminates in a line with the hinder margin of the posterior molars, or even in advance of that line, and in this respect differs from other *Carnivora*; the posterior portion of the skull is short, and there are two true molars on either side, both of the upper and lower jaw.

The principal genera contained in this family are *Canis*, *Fennecus*, *Lycaon*, and *Megalotis*. In the form of the lower jaw, and in dentition, the last-mentioned genus affords a most remarkable exception to the other *Carnivora*, and the palate terminates behind the line of the posterior molars; there may be some doubt therefore as to its real situation.

The *Viverridæ* have the same general form of skull as the *Canidæ*, but differ in having the posterior portion more produced; the bony palate is carried further back, and the small back molar observable in the lower jaw of the Dogs is here wanting; they have, therefore, but one true molar on either side of the lower jaw, and two true molars on each side of the upper jaw.

To this family belong the genera *Paradoxurus*, *Cynogale* (which

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The Hyæna, Mr. Waterhouse is inclined to regard as an aberrant form of the *Viverridæ*: in the general characters of the cranium, and especially in the curved form of the lower jaw, it differs considerably from the Cats (with which it has by some been associated), and approaches the Viverras. If, however, it be placed with the *Viverridæ*, it will form an exception, as regards its dentition, having but one true molar on either side of the upper jaw. The 'carnassière' has a large inner lobe, and in this respect also resembles the *Viverras*, and not the Cats.

The species of the family *Felidæ* may at once be distinguished by the short rounded form of the skull, combined with the straightness of the lower margin of the ramus of the lower jaw, and the reduced number of the teeth, especially of the true molars, of which there are none in the lower jaw, and but one in the upper, and that very small.

This family contains the genus *Felis*, species of which are found in all quarters of the globe, Australia excepted. The Cats appear to bear the same relation to the *Mustelidæ* as the Dogs to the *Viverridæ*.

The *Mustelidæ*, like the *Felidæ*, have the muzzle short and obtuse; the skull, however, is more elongated. They may be distinguished by there being one true molar on either side of each jaw; that in the upper jaw is well-developed, and generally transverse; but in some, such as the Badger, it is longer than broad: in the Otters, Skunks, and American Badger (*Taxidia Labradorica*), the true molar is intermediate in form between the common Badger (*Meles vulgaris*) and the more typical *Mustelidæ*. The false molars in the Weasels (*Mustela*) are typically $\frac{3-3}{4-4}$, but in some species they are reduced to $\frac{1-1}{3-3}$. As in the *Felidæ*, the angle of the lower jaw, in the greater portion of the *Mustelidæ*, is on the same plane as the lower edge of the horizontal ramus: in other *Carnivora* it is raised. In this family there is a great tendency in the glenoid cavity of the temporal bone to inclose the condyle of the lower jaw. The condyle is more truly cylindrical, and longer than in other *Carnivora*. In the Dogs there is no trace of the anterior descending process of the temporal bone, which in the Mustelas confines the condyle of the lower jaw;

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The genera contained in this family are *Mustela*, *Zorilla*, *Galictis*, Bell (which must not be confounded with the *Galictis* of Is. Geoffroy St. Hilaire, published in the 'Comptes Rendus' for October 1837, p. 581.), *Mellivora*, *Ursitaxus*, *Helictis* and *Gulo*, in which the true molar of the upper jaw is transverse; *Lutra* and *Mephitis*, in which this tooth approaches more or less to a square form; *Taxidea*, in which it is triangular; and lastly, *Meles*, *Arctonyx* and *Mydaus*, in which the true molar is longer than broad. This last-mentioned genus evinces an approach to the order *Insectivora*.

In the *Ursidæ* there are two well-developed true molars on either side of each jaw: the 'carnassière' here has changed its function, not being suited, as in other *Carnivora*, to cutting flesh. The palate is considerably elongated. In the Bears (*Ursus* and its subgenera) it is small, being robbed as it were of its nutriment by the true molars, which are very large. In the other *Ursidæ* (*Procyon*, *Nasua*, *Cercoleptes*, *Arctictis* and *Ailurus*,) the 'carnassière,' especially that of the upper jaw, and the true molars, are nearly equal in size, and also nearly resemble each other in other respects*.

In the true Bears the form of the lower jaw differs from that of any of the preceding *Carnivora* in having a projecting process on the under side of the ramus, and situated a little in advance of the angle of the jaw. The same character is also found in many Seals (*Phocidæ*), which in several other respects appear to approach the Bears.

VII.—*Summary Description of Four new Species of Otter.* By B. H. Hodgson, Esq., Resident at Catmandu, Nepal†.

One of the most remarkable features of the mammalogy of Nepal is the great number of distinct species of *Otter* characterizing it. There are at least seven species, I believe, though not one of them is numerous in individuals, at least not in comparison of the common Otter of commerce, which is produced in the neighbourhood of Dacca and Sylhet. This rarity of species, added to the circumstance of the animals not being regularly hunted for their skins, renders it very difficult to procure live specimens; and without live specimens

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